METABOLIC BASES OF VITAMINS REQUIREMENTS

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The aims of this project are

- Provide a clear and easy knowledge to the population about what are the vitamins and how they performance in the metabolism
- Show the amount that we need and why and from which foods we can get it
- Explain the consequence of a deficit

Vitamins in metabolism

- Thiamine (B1)
  Coenzyme: thiamine pyrophosphate (TPP)
  Deficiency: Beriberi

- Riboflavin (B2)
  Coenzyme: Flavin adenine dinucleotide (FAD) and Flavin mononucleotide (FMN)
  Deficiency: Ariboflavinosis

- Niacin (B3)
  Coenzyme: nicotinamide adenine dinucleotide (NAD) and nicotinamide adenine dinucleotide phosphate (NADP)
  Deficiency: Pellagra

- Pantothenic acid (B5)
  Component of CoA enzyme
  Deficiency: Unusual. Headaches and loss of vision

- Pyridoxine (B6)
  Coenzyme: pyridoxal 5'-phosphate
  Deficiency: Neurological problems and inflammation

- Biotin (B7)
  Coenzyme of carboxylases
  Deficiency: Unusual. Hair loss and rashes

- Cobalamin (B12)
  Cofactor of enzyme methionine synthase and L-methylmalonyl-CoA mutase
  Deficiency: Atrophic gastritis and pernicious anemia

Background

Vitamins

- **Liposoluble**
- **Hydrosoluble:** vitamins of complex B and C. Are involved in metabolism as coenzymes.

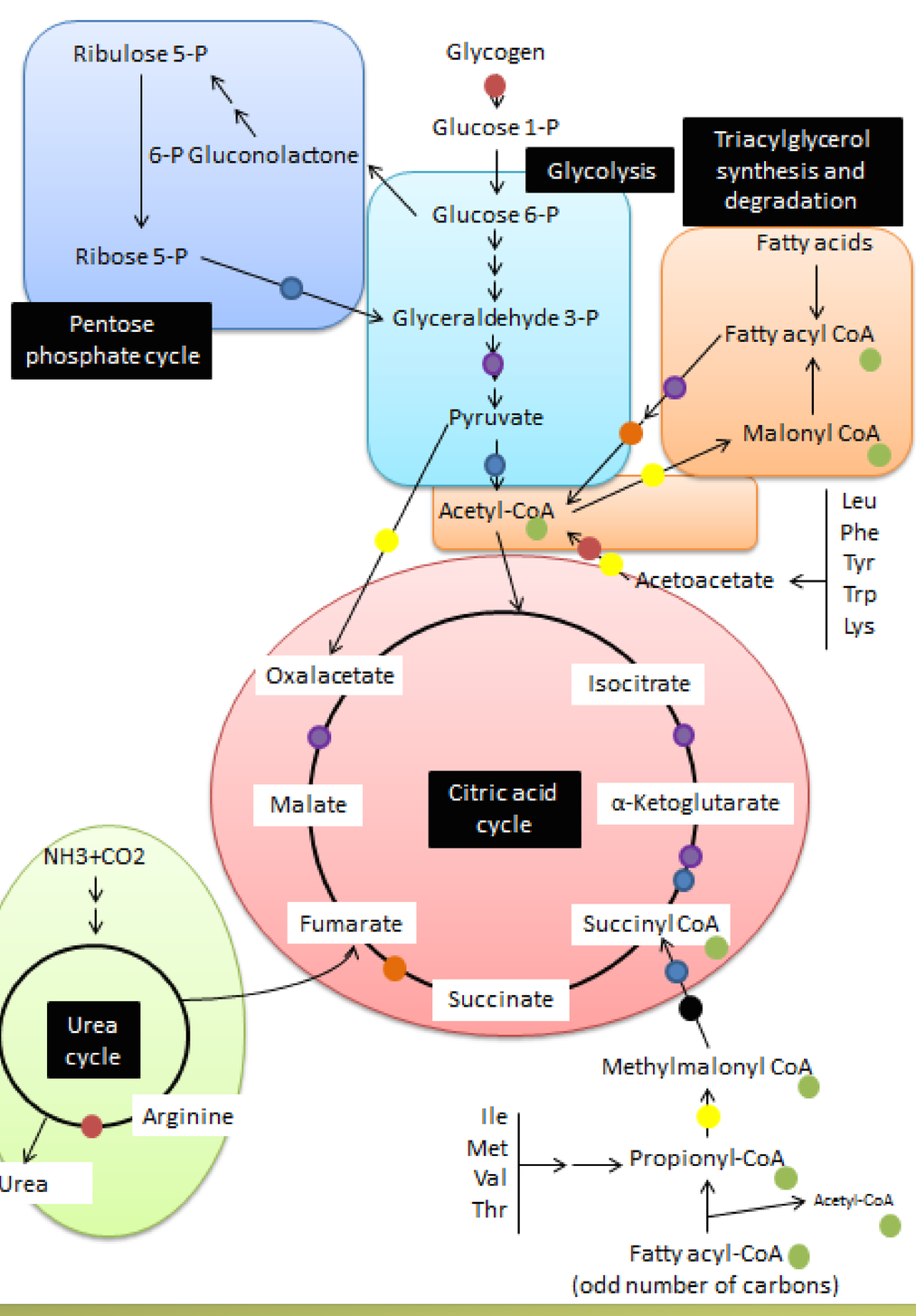
Metabolism

It involves chemical reactions that take place in the organism to extract energy, synthesize proteins, carbohydrates and fats.

- **Catabolism**
- **Anabolism**

Coenzymes

It required for the action of some enzymes in the metabolism.



Take home message

- Vitamins are vital for appropriate functioning of our body.
- Deficits will be unlikely, except for cases of poor nutritional habits.